

The Intertie Project and Parker-Davis Project 10-Year Plan

Fiscal Year 2023-2032

November 3, 2022

Desert Southwest Region

Phoenix, AZ

Version 2: Revised October 28, 2022 to include additional information



Agenda

- Welcome
- Changes to 10-Year Plan
- Projects for Vote
- Analysis of Alternatives
- 10-Year Plan and Estimated Rate Impact
- Prepayment Vote Preview
- Next Steps



Welcome to the 10-Year Plan Meeting

Tonya Spencer, Acting Director of Transmission and
Construction



Changes to the 10-Year Plan

- Updated estimates indicate increases to project costs. Much of this is due to inflation of labor and materials. To minimize impacts to rates, changes have been made to the 10-year plan.
- Projects postponed for future vote
 - Oracle-Tucson 115-kV Rebuild
 - Coolidge Station Service
 - Wood Pole Replacement Program FY26-28
- Projects for vote in December 2022
 - Bouse Upgrade
 - Gila-Knob 161-kV Remaining Rebuild
 - Pinnacle Peak-Rogers Transmission Line Restoration



Projects for Vote



Pinnacle Peak-Rogers 230-kV Restoration Project

Project Manager: Mike Baird

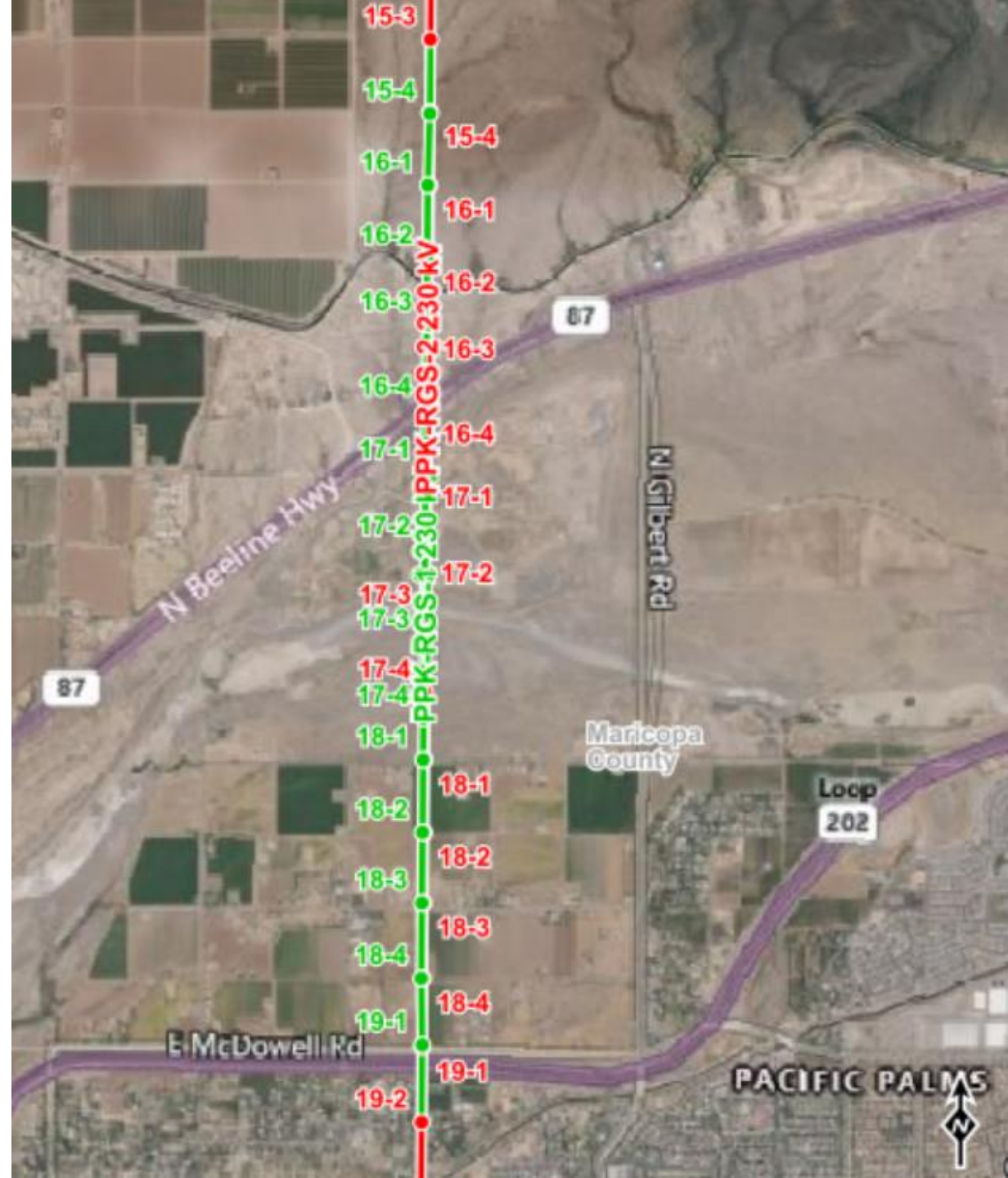
Baird@wapa.gov

(602) 605-4428



Pinnacle Peak-Rogers 230-kV Restoration Project Overview

- Emergency response in July temporarily repaired one of the two circuits
- This project will complete the full restoration of both circuits on steel monopoles across approximately 3 miles



Pinnacle Peak-Rogers 230-kV Restoration Project Budget

SEED FUNDING
PHASE
+/- 20%
ESTIMATE ACCURACY

2022 10-Year Plan

	PROJECTED TOTAL BUDGET	FY23	FY24
Parker-Davis Project	\$6,850	\$5,152	\$154
Colorado River Storage Project	\$6,850	\$5,152	\$154
Total Project Budget	\$13,700	\$10,304	\$308

- Project cost will be split evenly between Colorado River Storage Project and Parker-Davis Project customers
- Design completed by December 2022
- Construction mobilization expected late 2023
- In-service energization anticipated mid-2024
- Will avoid summer outages to maintain system reliability



Bouse Upgrade

Project Manager: Tony Gagajewski

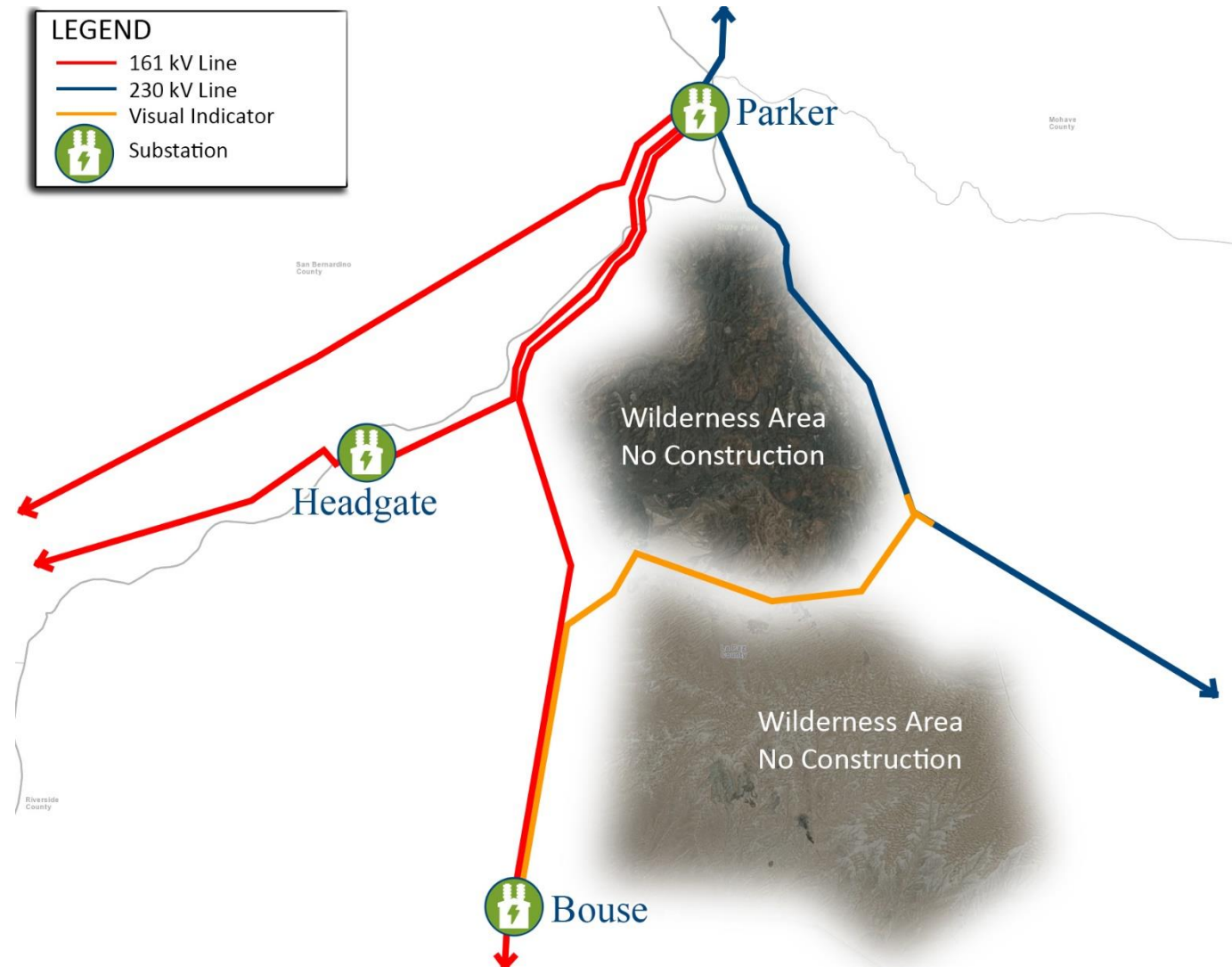
Gagajewski@wapa.gov

(602) 605-2429

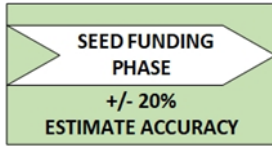


Bouse Upgrade Project Overview

- Construction of 18-mile double circuit transmission line between Parker-Liberty #2 and Bouse Substation
- Expansion of Bouse Substation to add two 230-kV bays
- Connection of existing Parker-Bouse and Parker-Headgate Rock 161-kV lines to connect the Bouse and Headgate Rock substations
- Decommission and remove segments of the existing Parker-Bouse and Parker-Headgate Rock transmission lines



Bouse Upgrade Project Budget



2022 Draft 10-Year Plan

PROJECTED TOTAL BUDGET	FY23	FY24	FY25	FY26	FY27	FY28	FY29
\$45,916	\$150	\$1,097	\$8,546	\$9,552	\$14,880	\$9,635	\$844

2022 10-Year Plan

PROJECTED TOTAL BUDGET	FY23	FY24	FY25	FY26	FY27	FY28	FY29
\$79,436	\$7,908	\$46,213	\$3,503	\$10,835	\$7,049	\$1,837	\$710

- Final environmental assessment is available on WAPA's website
- Continuing to evaluate routes and engage with stakeholders
- Construction is anticipated to occur between 2025 and 2028
- Total budget is based on 75% design



Gila-Knob 161-kV Remaining Rebuild

Project Manager: Roger Wright

Contact Information

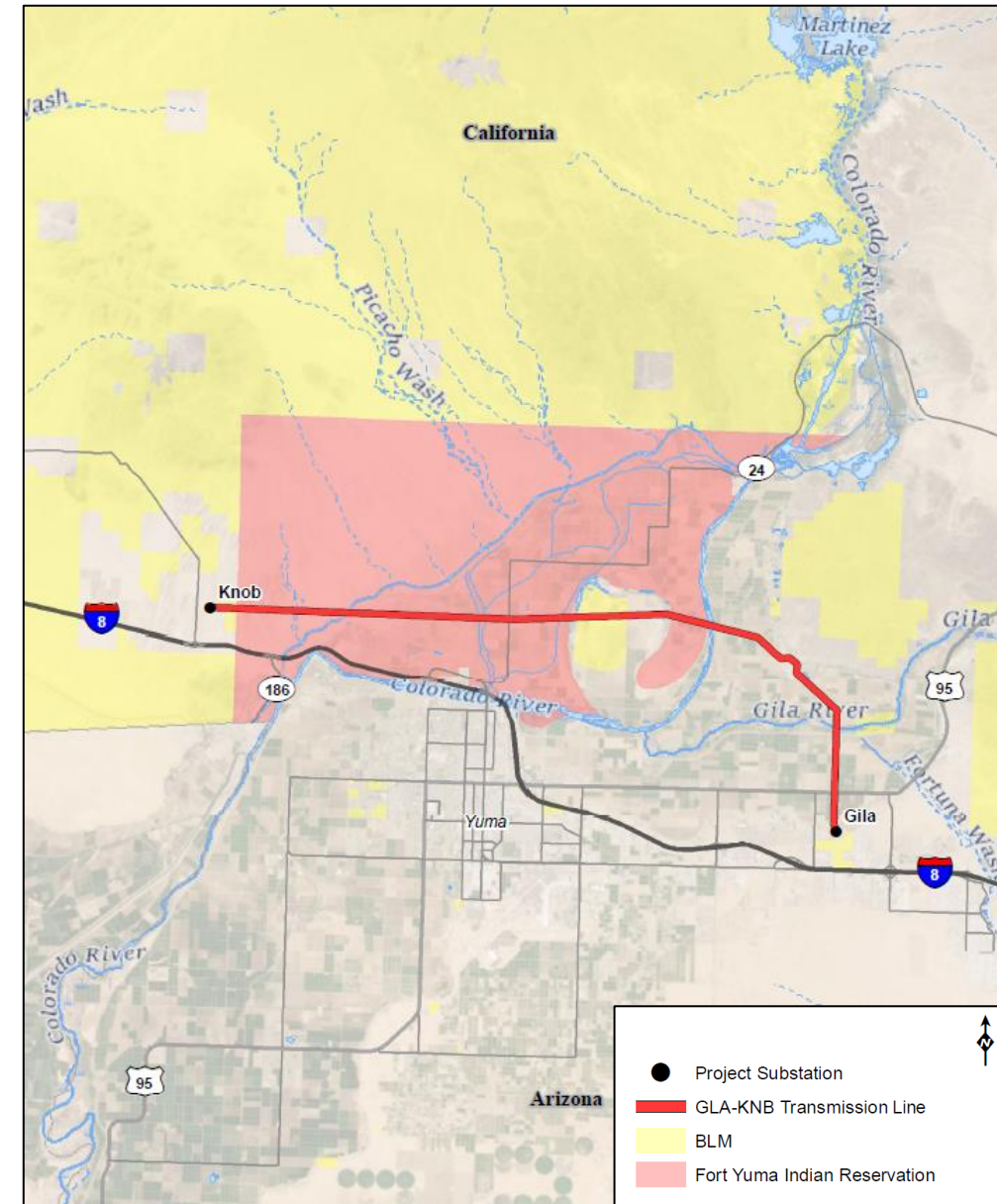
Rwright@wapa.gov

(602) 605-2498



Gila-Knob 161-kV Remaining Rebuild Project Overview

- Remove all wood poles between Gila-North Gila (~5 miles) and replace with steel monopoles
- Remove all wood poles between North Gila and Knob (~15 miles) and replace with light-duty steel
- String 1272 ACSS conductor and two bundled 795 ACSR conductors between Gila-North Gila and 954 ACSR between North Gila and Knob



Gila-Knob 161-kV Remaining Rebuild Project Budget

SEED FUNDING
PHASE
+/- 20%
ESTIMATE ACCURACY

2022 Draft 10-Year Plan

PROJECTED TOTAL BUDGET	FY23	FY24	FY25	FY26	FY27
\$24,270	\$100	\$1,520	\$19,400	\$2,500	\$500

2022 10-Year Plan

PROJECTED TOTAL BUDGET	FY23	FY24	FY25	FY26	FY27	FY28
\$32,322	\$1052	\$624	\$25,072	\$3,203	\$2,062	\$52

- Design is at 50%
- Construction anticipated to occur between 2025 and 2027
- Material costs have increased significantly



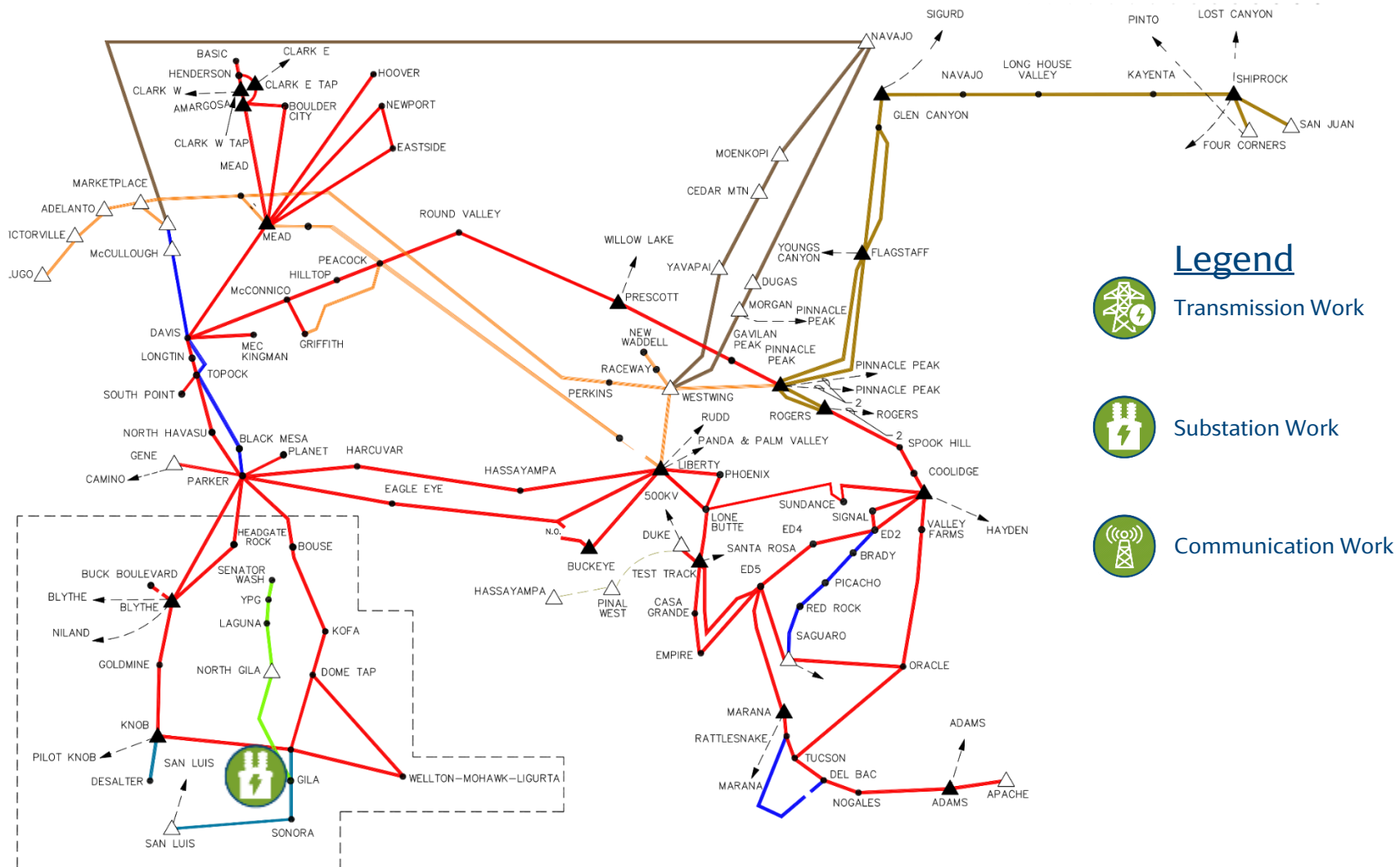
Analysis of Alternatives

Preferred Alternative

Analysis of Alternatives (AOA) study. AOA study is a conceptual project design, scope, schedule, and budget with a \pm 30% degree accuracy.



Gila Substation 34.5-kV Rebuild AOA Study



Project Need and Alternatives Studied

- Project need: Increased maintenance efforts required due to aging equipment manufactured in 1940s. Concerns include broken disconnect switches, deteriorating foundations, oil leaks, and inadequate spacing between energized equipment.
- Alternatives studied:
 1. Continue routine maintenance
 2. Replace failing and obsolete equipment in existing yard
 3. Relocate and rebuild in main-and-transfer bus configuration
 4. Relocate and rebuild in breaker-and-a-half configuration



Preferred Alternative

- Alternative 4
 - Relocate and rebuild in breaker-and-a-half configuration
 - Designed to 69-kV standards and operated at 34.5-kV
 - Conceptual schedule: FY24-29



Scope of Work

- Remove all 69-kV equipment, structures, and foundations
- Construct new switchyard with three bays in a breaker-and-a-half configuration
- Install:
 - 34.5-kV shunt capacitor bank and associated controls, switches, and instrument transformers
 - Control panels in 161-kV switchyard
 - Control cables from 34.5-kV equipment to 69-kV switchyard
 - Digital fault recorder in the 161-kV switchyard
- Transfer three 69-kV transmission lines to new switchyard
- Transfer tie lines from 69/34.5-kV transformers KZ5A and KZ5B to new switchyard



Gila Substation 34.5-kV Rebuild Project Budget

- Total conceptual project cost for the preferred alternative: \$16.5m

Gila Substation 34.5-kV Rebuild Conceptual Estimates			
Category	Alternative 2	Alternative 3	Alternative 4
Administrative	\$614	\$1,327	\$855
Design	\$957	\$945	\$1,449
Environmental	\$336	\$484	\$463
Land and Land Rights	\$20	\$20	\$20
Government Furnished Equipment	\$230	\$2,024	\$2,554
Construction	\$3,480	\$8,054	\$9,570
Commissioning Activity	\$754	\$656	\$782
Subtotal	\$6,390	\$13,510	\$15,692
Management Reserve (5%)	\$330	\$675	\$785
Total Project Budget	\$6,710	\$14,185	\$16,477



Gila Substation 34.5-kV Rebuild Project Budget



2022 Draft 10-Year Plan

PROJECTED TOTAL BUDGET	FY23	FY24	FY25	FY26	FY27	FY28
\$15,250	\$800	\$100	\$100	\$12,300	\$1,450	\$500



2022 10-Year Plan

PROJECTED TOTAL BUDGET	FY24	FY25	FY26	FY27	FY28	FY29
\$16,477	\$855	\$281	\$100	\$10,151	\$3,288	\$1,802

- The breaker-and-a-half configuration has been selected as the preferred alternative
- AOA estimates will be revalidated in 2023
- Anticipate vote to occur in 2024



10-Year Plan and Estimated Rate Impact

Fiscal Year 2023 - 2032



10-Year Plan FY23 – FY32

Parker-Davis Project

PROJECT NAME	PROJECTED TOTAL BUDGET	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Yuma Area Maintenance Building	\$6,100	\$144									
Dome Tap-Gila 161-kV Rebuild	\$4,100	\$445	\$99								
Kofa-Dome Tap 161-kV Rebuild	\$5,138	\$2,177	\$142								
Wood Pole Replacement Program FY22-24	\$13,697	\$1,925	\$8,072								
Bouse-Kofa 161-kV Rebuild	\$26,520	\$3,033	\$2,246	\$1,366	\$128						
Gila Substation 69-kV Rebuild	\$17,900	\$588	\$14,033	\$1,691	\$418	\$25					
Parker-Blythe 161-kV #2 Rebuild Phase-1	\$14,209	\$11,671	\$881	\$162	\$10						
Parker-Blythe 161-kV #2 Rebuild Phase-2	\$13,876	\$328	\$10,579	\$1,912	\$1,022	\$35					
Parker-Blythe 161-kV #2 Rebuild Phase-3	\$13,876		\$344	\$10,946	\$1,507	\$1,044	\$35				
Crossman Peak Microwave Facility	\$4,525		\$688	\$2,340	\$70						
Pinnacle Peak-Rogers 230-kV Restoration	\$6,850	\$5,152	\$154								
Gila-Knob 161-kV Remaining Rebuild	\$32,322	\$1,052	\$624	\$25,072	\$3,203	\$2,062	\$52				
Bouse Upgrade Project	\$79,436	\$7,908	\$46,213	\$3,503	\$10,835	\$7,049	\$1,837	\$710			
Oracle-Tucson 115-kV Rebuild	\$9,011	\$150	\$275	\$1,050	\$7,315	\$118					
Coolidge Station Service	\$3,673				\$462	\$1,698	\$1,513				
Wood Pole Replacement Program FY26-28	\$13,500				\$4,500	\$4,500	\$4,500				
Gila Substation 34.5-kV	\$16,477		\$855	\$281	\$100	\$10,151	\$3,288	\$1,802			
Wood Pole Replacement Program FY29-31	\$13,500							\$4,500	\$4,500	\$4,500	
Wellton New Control Building	\$3,800				\$500	\$100	\$100	\$2,600	\$500		
Blythe-Headgate Rock #1 161-kV Rebuild	\$23,900				\$1,195	\$100	\$100	\$9,560	\$11,711	\$1,234	
Parker Substation 161-kV Replacements	\$16,850				\$800	\$100	\$100	\$13,550	\$1,800	\$500	
Cochise Substation Remediation	\$3,600				\$500	\$100	\$100	\$2,400	\$500		
Parker Substation 230-kV Replacements	\$12,100					\$800	\$100	\$100	\$9,800	\$1,300	
Bouse-Headgate Rock 161-kV Rebuild	\$8,995						\$800	\$100	\$100	\$7,495	\$500
Wood Pole Replacement Program FY32-34	\$13,500										\$4,500
2022 FISCAL YEAR TOTALS		\$34,573	\$85,205	\$48,323	\$32,565	\$27,882	\$12,525	\$35,322	\$28,911	\$15,029	\$5,000

*NOTE: All values in this presentation are in thousands of dollars



10-Year Plan FY23 – FY32

Intertie Project

PROJECT NAME	PROJECTED TOTAL BUDGET	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Mead Redundant Bus Diff Relays 230-kV	\$1,740				\$1,188	\$450	\$102				
Mead Redundant Bus Diff Relays 500-kV	\$372				\$350	\$15	\$7				
Mead 345-kV Series Cap Bank Removal	\$2,150						\$500	\$100	\$100	\$950	\$500
2022 FISCAL YEAR TOTALS		\$0	\$0	\$0	\$1,538	\$465	\$609	\$100	\$100	\$950	\$500



Parker-Davis Project 10-Year Plan Rate Impact

PROJECT NAME	In Service Date	Interest Rate	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Prior Year Projects (Pending Closeout)	2022 +	various	\$ 0.29	\$ 0.58	\$ 0.73	\$ 0.88	\$ 0.88	\$ 0.88	\$ 0.88	\$ 0.88	\$ 0.88	\$ 0.88
Capital O&M	2022 +	various	\$ 0.07	\$ 0.12	\$ 0.27	\$ 0.40	\$ 0.55	\$ 0.66	\$ 0.76	\$ 0.87	\$ 0.97	\$ 1.00
Yuma Area Maintenance Building	2023	3.000%		\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11
Dome Tap-Gila 161-kV Rebuild	2024	3.000%			\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08
Kofa-Dome Tap 161-kV Rebuild	2024	3.000%			\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10
Wood Pole Replacement Program FY22-24	2024	3.000%			\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25
Bouse-Kofa 161-kV Rebuild	2026	3.000%					\$ 0.52	\$ 0.52	\$ 0.52	\$ 0.52	\$ 0.52	\$ 0.52
Gila Substation 69-kV Rebuild	2027	3.000%						\$ 0.35	\$ 0.35	\$ 0.35	\$ 0.35	\$ 0.35
Parker-Blythe 161-kV #2 Rebuild Phase-1	2026	3.000%					\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28
Parker-Blythe 161-kV #2 Rebuild Phase-2	2027	3.125%						\$ 0.27	\$ 0.27	\$ 0.27	\$ 0.27	\$ 0.27
Parker-Blythe 161-kV #2 Rebuild Phase-3	2028	3.250%							\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28
Crossman Peak Microwave Facility	2026	3.000%					\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09
Pinnacle Peak-Rogers 230-kV Restoration	2024	3.000%			\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13
Gila-Knob 161-kV Remaining Rebuild	2028	3.000%							\$ 0.62	\$ 0.62	\$ 0.62	\$ 0.62
Bouse Upgrade Project	2029	3.000%								\$ 1.61	\$ 1.61	\$ 1.61
Oracle-Tucson 115-kV Rebuild	2027	3.000%						\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17
Coolidge Station Service	2028	3.500%							\$ 0.07	\$ 0.07	\$ 0.07	\$ 0.07
Wood Pole Replacement Program FY26-28	2028	3.500%							\$ 0.27	\$ 0.27	\$ 0.27	\$ 0.27
Gila Substation 34.5-kV	2029	3.250%								\$ 0.32	\$ 0.32	\$ 0.32
Wood Pole Replacement Program FY29-31	2031	3.625%										\$ 0.27
Wellton New Control Building	2030	3.500%									\$ 0.08	\$ 0.08
Blythe-Headgate Rock #1 161-kV Rebuild	2031	3.500%										\$ 0.49
Parker Substation 161-kV Replacements	2031	3.500%										\$ 0.32
Cochise Substation Remediation	2030	3.500%									\$ 0.07	\$ 0.07
Parker Substation 230-kV Replacements	2031	3.625%										\$ 0.23
Bouse-Headgate Rock 161-kV Rebuild	2032	3.625%										
Wood Pole Replacement Program FY32-34	2034	3.625%										
Total /kW-Year			\$ 0.36	\$ 0.82	\$ 1.66	\$ 1.93	\$ 2.97	\$ 3.87	\$ 5.21	\$ 7.25	\$ 7.49	\$ 8.84
Total /kW-Month			\$ 0.03	\$ 0.07	\$ 0.14	\$ 0.16	\$ 0.25	\$ 0.32	\$ 0.43	\$ 0.60	\$ 0.62	\$ 0.74



P-DP 5-year Rate Window

Intertie Project 10-Year Plan Rate Impact

PROJECT NAME	In Service Date	Interest Rate	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Prior Year Projects (Pending Closeout)	2022 +	3.000%	\$ 0.01	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02
Capital O&M	2022 +	3.000%	\$ 0.06	\$ 0.14	\$ 0.18	\$ 0.24	\$ 0.31	\$ 0.37	\$ 0.43	\$ 0.48	\$ 0.54	\$ 0.60
Prior Year Projects (Pending Closeout)/Capital O&M	2022 +	3.000%	\$ 0.07	\$ 0.16	\$ 0.20	\$ 0.26	\$ 0.33	\$ 0.39	\$ 0.44	\$ 0.50	\$ 0.56	\$ 0.61
Mead Redundant Bus Diff Relays 230-kV	2028	3.500%							\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05
Mead Redundant Bus Diff Relays 500-kV	2028	3.500%							\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01
Mead 345-kV Series Cap Bank Removal	2032	3.625%										
Total /kW-Year			\$ 0.07	\$ 0.16	\$ 0.20	\$ 0.26	\$ 0.33	\$ 0.39	\$ 0.51	\$ 0.56	\$ 0.62	\$ 0.68
Total /kW-Month			\$ 0.01	\$ 0.01	\$ 0.02	\$ 0.02	\$ 0.03	\$ 0.03	\$ 0.04	\$ 0.05	\$ 0.05	\$ 0.06



Prepayment Vote Preview

Official Proxy Ballot

WESTERN AREA POWER ADMINISTRATION



Prepayment Funding Process for Construction

Please provide the following information:

My vote to approve the proposed construction project is:

		Yes	No
Bouse Upgrade	\$79,436,000	<input type="checkbox"/>	<input type="checkbox"/>
Gila-Knob 161-kV Remaining Rebuild	\$32,322,000	<input type="checkbox"/>	<input type="checkbox"/>
Pinnacle Peak-Rogers 230-kV Repairs	<u>\$ 6,850,000</u>	<input type="checkbox"/>	<input type="checkbox"/>
Total Prepayment funding vote	\$118,608,000		



Next Steps

April 12th
Active Projects
Meeting

Meeting Focus

- Active Construction Projects Update

AOA Feedback Opportunity

- DSW Identified Alternatives
- Additional Alternatives

June 29th
Draft Plan
Meeting

Meeting Focus

- Draft 10-Year Plan Presented
- Estimated Rate Impacts Presented
- Capital Operations and Maintenance Projects Update

AOA Feedback Opportunity

- WIP Study Materials

November 3rd
10-Year Plan
Meeting

Meeting Focus

- 10-Year Plan Presented
- Estimated Rate Impacts Presented

AOA Feedback Opportunity

- Preferred Alternative Selection

December
Prepayment Vote
Meeting

Meeting Focus

- Prepayment Vote
 - Bouse Upgrade
 - Gila-Knob 161-kV Remaining Rebuild
 - Pinnacle Peak-Rogers 230-kV Restoration

AOA Feedback Opportunity

- AOA Look Ahead



We are here



Questions?



www.wapa.gov

Contacts

Tony Guinane

10-Year Plan Manager

Guinane@wapa.gov / (602) 605-2548

Tonya Spencer

Acting Director of Transmission and
Construction

Tspencer@wapa.gov / (970) 461-7505



Thank you for attending



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